

REMARKS

Claims 52-78, 80-82, 86-93 and 95 are pending. Claims 79, 83 and 84 have been canceled herein without prejudice. Claims 52, 76, 80, 86 and 90 have been amended herein. Support for the amendments is as detailed below.

Applicants' Response to the Rejections under 35 U.S.C. §103

Claims 52-54, 60, and 68-78 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Yamazaki et al.* in view of *Lo et al.* and *Davis et al.* Specifically, the Office Action asserts that the cleanliness sensor, which was added as a limitation to the original limitations of claim 1, is disclosed in *Davis et al.* The Office Action points to *Davis et al.* as disclosing a shut-down device at col. 27, line 61 to col. 28, line 36.

In response thereto, Applicants have amended claim 52 to more distinctly claim the subject matter the Applicants regard as the invention. Specifically, the Applicants have added the feature that the atmospheric pressure is maintained in the mini-environment chamber.

Concerning amended claim 52, this claim is supported by the fact that the mini-environment chamber 20 is separated from the loader housing 40 by valves 271, 272, 273, thereby maintaining the mini-environment chamber at atmosphere pressure at any time (see also pages 57-58). To the contrary, neither *Yamazaki et al.* nor *Lo et al.* discusses a problem of dust that adheres to a wafer while the loading chamber is evacuated. Also *Davis et al.* discusses that the pressure inside a chamber is evacuated or purged. This is clear from the expression "in the vacuum load chamber 12" appearing in column 10, lines

64-65. Consequently, it is clear that amended claim 52 is distinguished from the prior art references.

Wherefore, Applicants respectfully request favorable reconsideration.

Claim 55 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Yamazaki et al.*, *Lo et al.* and *Davis et al.*, and further in view of *Bachman*; claim 56 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Yamazaki et al.*, *Lo et al.* and *Davis et al.* and *Bachman*, and further in view of *Abe et al.*; claims 57-59 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Yamazaki et al.*, *Lo et al.* and *Davis et al.* and further in view of *Watanabe et al.*; claims 61, 62, and 65-67 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Yamazaki et al.*, *Lo et al.* and *Davis et al.* and further in view of *Petric*; claim 63 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Yamazaki et al.*, *Lo et al.* and *Davis et al.* and *Petric*, and further in view of *Lamattina et al.*; and claim 64 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Yamazaki et al.*, *Lo et al.* and *Davis et al.* and *Petric*, and further in view of *Bisschops et al.* Applicants submit that due to the amendment to base claim 52 for all the rejections based in part on *Yamazaki et al.*, *Lo et al.*, and *Davis et al.*, the rejections to the subsequent claims are also overcome by nature of their dependency. Wherefore, favorable reconsideration is requested.

Applicants further note that claim 76 has been amended to more distinctly describe the steps required.

Claim 86 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Yamazaki et al.*, *Lo et al.* and *Davis et al.* and 87-89 further in view of *Livesay*.

In response thereto, Applicants have amended claim 86 in order to more distinctly claim the subject matter regarded as the invention. The claim stands rejected because "gradual" does not convey specific meaning as to the deepening of voltage applied. Hence, Applicants have amended the claim to further describe the gradually deepened applied voltage. Specifically, the voltage is applied in a manner "so that an insulating layer is prevented from breakdown."

Applicants respectfully submit that none of the cited references demonstrate this gradual deepening of voltage to reach a predetermined value at a predetermined time so that an insulating layer is prevented from breakdown. Wherefore, favorable reconsideration of claim 86 and those dependent therefrom (87-89) is respectfully requested. Amended claim 86 is supported by curves A and B shown in Fig. 25(a) (*see* pages 112-114 and 132 of the specification).

Claims 90-93 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Yamazaki et al.* The Office Action states that although there is no disclosure in *Yamazaki et al.*, the reference does teach determining voltage to be applied by the resolving performance of a mapping projection optical system, which according to the Office Action, inherently involves applying varying retarding voltages to the object under test, and based on the magnitude of a distorted pattern in the image, evaluating the charging state of the object and adjusting the retarding voltage to achieve higher resolution.

Applicants respectfully submit *Yamazaki et al.* determines a retarding voltage on the "basis of the resolving performance of the mapping projection optical system", that is,

on the basis of the performance of an apparatus. To the contrary, the present invention per amended claim 90 determines a retarding voltage from the result of actual measurement of images of samples. Hence, Applicants respectfully submit that amended claim 90 is not obvious in light of *Yamazaki et al.* and respectfully request favorable reconsideration.

Applicants' Response to the Rejections under 35 U.S.C. §102

Claims 79 and 81 stand rejected under 35 U.S.C. §102(b) as being anticipated by *Murakoshi et al.* In response thereto, Applicants have incorporated allowable claim 80 into claim 79. Wherefore, Applicants respectfully submit the rejection is now moot.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 50-2866.

Respectfully submitted,

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